

671
Statistical
Bureau
Portland

Insect Control
Southern Oregon-Northern California Project

STATISTICAL DATA
on the
WESTERN PINE BEETLE SITUATION
on the
PROPOSED SOUTHERN OREGON-NORTHERN CALIFORNIA CONTROL PROJECT
as revealed by the
SURVEY OF AUGUST, SEPTEMBER AND OCTOBER, 1921, COOPERATIVELY CARRIED OUT
by the
Bureau of Entomology
Forest Service
Indian Service
and the
Klamath-Lake Counties Forest Fire Association
Volume A
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October 25, 1921

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PREFACE

The data presented in this report were secured by an insect survey conducted cooperatively by the Bureau of Entomology, the Forest Service, the Indian Service and the Klamath-Lake Counties Forest Fire Association. The field work was carried on in August, September and October, 1921. Special credit is due the Klamath-Lake Counties Forest Fire Association, the representative of the private owners involved in project, for the splendid cooperation given the federal agencies in the conduct of this survey.

The data included in this report are based on a survey which was far more intensive and detailed than that conducted in April, 1921, the results of which were incorporated in the Forest Service reports of May 10 and May 20, 1921.

Method of the Survey

The insect survey methods developed by the Bureau of Entomology were used in this survey by all the men engaged on the survey. These insect survey methods have been fully tested on a large scale in various portions of the Pacific Coast pine belt.

The survey was undertaken in order to make possible the outlining of a definite control plan for the immediate reduction of the enormous losses in the yellow pine timber which have been caused by the western pine beetle (*Dendroctonus brevicomis*) in the area under consideration, namely, the so-called southern Oregon-northern California control project as outlined in the accompanying map. Yellow pine timber of high quality, under federal and private ownership, is suffering tremendously as the result of the depredations of the western pine beetle.

A description of the survey and a discussion of the data revealed by it, will be made the subject of a special report to be completed not later than November 15, 1921. The following preliminary statements will suffice, it is hoped, to enable an understanding of the more important facts revealed by the tabulations given herewith.

The Project Area.

The project is substantially the same as that under consideration in the report of May 10, 1921. It includes parts of the Modoc and Klamath National Forests in northern California, portions of the Fremont and Crater National Forests in southern Oregon, a large area in the Klamath Indian Reservation, considerable vacant public land, a small acreage of timber controlled by the state, and an enormous acreage of intermingled privately owned yellow pine. For convenience, the project has been divided into five areas, as follows:

Modoc Area

Fremont Area

Klamath Indian Reservation.

Area south of the Klamath Indian Reservation.

Area west of Klamath Lake.

Division into Units.

Each one of the five above-named areas is divided into so-called units. This division into units is purely arbitrary. The infestation in the various units is closely inter-related and the unit divisions were made solely for convenience in settling the administrative problems which the control work entails. The boundaries between the units are often based on topographic features, but occasionally they follow ownership lines.

Computation of acreages by Units.

The timbered acreages and non-timbered acreages were computed section by section, using all existing data, as well as the information secured in the course of the field work. The computations are believed to be fairly accurate.

Computation of Yellow Pine Volume by Units.

Considerable data on the volume of the yellow pine stands on the federal lands included in the survey were available. Especially is this true of the National Forest and Indian Reservation yellow pine timber. Since most of the privately owned timber within the proposed project is under the protection of the Klamath-Lake Counties Forest Fire Association, this Association was able to furnish dependable information on the yellow pine stands in private ownership.

Ownership Data

The records in the County Clerks' offices in the various Counties were depended upon for the ownership status. These records were gone over section by section, and therefore, the acreages given for the various types of ownerships by units, by areas and for the project as a whole, can be depended upon.

Estimates of 1920 Beetle Damage

The figures given are very conservative. The survey was done with sufficient intensity to justify the 1920 beetle damage by the individual units. The "Klamath Volume Table, Scribner Decimal C, Form 674-V, U. S. Forest Service" was used as a basis for computing the timber volume.

A basic value of \$3.00 per thousand board feet of yellow pine was adopted for the purpose of estimating the monetary loss occasioned by the western pine beetle. This figure is low, considering the stampage prices obtainable in this region by the Forest Service and the Indian Service in their timber sales.

for yellow pine of similar quality and accessibility.

It is not possible to estimate the western pine beetle damage in any one calendar year until in the early summer of the following year, the earliest time when the detection of the beetle-killed trees by the felling of the foliage is possible. Before early summer, the foliage of all the trees attacked in the fall of the previous year will not have faded. Therefore, the 1921 beetle loss could not be obtained in this survey.

Mutation of Volume of 1920 Beetle Damage to Total Yellow Pine Volume.

This ratio is given for each unit, for each area and for the project as a whole. The ratios indicate the seriousness of the pine beetle damage even when the losses are not at their peak, as was the case in 1920, and the necessity for the prompt inauguration of control measures.

Estimate of Control Costs.

There are two generations of the western pine beetle each year in this region. The so-called overwintering or second generation is the generation against which the control measures are directed in the spring control operations, the major control operations of the year.

For the purpose of control estimates, it is necessary to assume that the volume of the timber infested by the second generation is equal to that attacked by the first generation. In other words, it must be assumed that one-half of the 1920 infestation (the only available and most recent infestation on which data could be secured) was caused by the overwintering generation.

The estimate of \$4.50 per thousand board feet of yellow pine to be treated, is based on the cost of past control operations in the region, the present labor conditions and prices of equipment and supplies, and existing conditions on the project area itself.

The apportionment of control costs between the federal government and the private owners was made on the proportionate volume of timber to be treated on the federal lands and the private lands. If any other basis of cooperation is agreed upon, as for instance an acreage basis which disregards the ownership distribution of the infested timber, a revision of this apportionment of the control costs between the federal government and the private owners will be necessary.

Further, the control costs as given in this report are based on the assumption that the entire project area will be covered by the spring 1922 control operations. The Bureau of Entomology may find it desirable, because of entomological considerations, to limit the spring 1922 control operations to the strictly epidemic infestation. Such a limitation would result in a reduction of the control costs of the Fremont and Modoc areas in particular. It is therefore evident that the total cost of the spring 1922 control operations and its apportionment by ownership can be fixed only after the Bureau's decision as to the areas which are to be covered by the spring 1922 operations and after the various government and private agencies have agreed on a basis for the cost apportionment.

The Survey Report of November 15, 1921.

A report descriptive of the survey which yielded the statistical data given herewith will be completed not later than November 15, 1921.

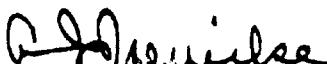
The Control Plan for the Project.

The control plan for the project will be prepared immediately after a tentative plan of co-operation between the various government and private agencies has been agreed upon and after the completion of the survey report. This report will be submitted for consideration on or about November 25, 1921.

Organization of this Report.

This report consists entirely of tabulations. As indicated by the Table of Contents, tables 32-39 inclusive summarize the situation on the entire project. The table numbers referring to the five areas in the project are as follows:

Modoc Area	1-6 Inclusive
Premont Area	7-13 "
Klamath Indian Reservation	14-17 "
Area south of Reservation	18-24 "
Area west of Klamath Lake	25-31 "


A. S. JAEINICKE

October 25, 1921.

U. S. Forest Service.

EDDOC AREA (Tables 1-6 Inc.)

EDDOC AREA (Tables 1-6 Inc.)

Table No. 1**Hodoo Area****Non-timbered and Timbered Acres***

Name of Unit	Non-timbered Acres	Timbered Acres	Total Acres
Crowder Flat	2,760	46,900	49,660
Geese Lake	4,000	33,900	37,900
River Mile	1,430	12,350	13,780
Totals	8,190	93,250	101,440

*See Table No. 2 for ownership data on timbered acreages.

Table No. 2

Modoc Area

Timbered Acreage and Yellow Pine Volumes by Ownership

Name of Unit	Modoc N. P.	Private	Total
	Timbered Acreage	Timbered Acreage	Timbered Acreage
	Board Feet	Board Feet	Board Feet
Crowder Flat	25,000	200,000,000	18,840
Goose Lake	25,040	290,320,000	15,760
Four Mile	11,960	59,800,000	400
Totals	62,000	460,120,000	33,960
			433,500,000
			95,000
			893,620,000

Table No. 2

Modoc Area

1920 Beetle Damage in Yellow Pine

Number of Trees* and Volume

Name of Unit	Modoc N. F.		Private		Total	
	Number of Trees		Volume in Bd.ft.		Volume in Bd.ft.	
Crowder Flat	1,275	1,300,000	1,895	1,841,000	3,080	3,141,000
Goose Lake	1,385	1,385,000	1,185	1,185,000	2,570	2,570,000
Four Mile	475	420,000	25	22,000	500	452,000
Total	3,135	3,113,000	3,015	3,048,000	6,150	6,161,000

*average volume of individual trees killed by beetles in 1920, given in Table No. 36.

Table No. 4

Hodoc Area

1920 Beetle Damage in Yellow Pine

Name of Unit	Hodoc R. I.	Private	Total			
	Volume in Board Feet	Value at \$3.00 per M.	Volume in Board Feet	Value at \$3.00 per M.	Volume in Board Feet	Value at \$3.00 per M.
Crowder Flat	1,300,000	\$3,900	1,841,000	\$5,523	3,141,000	\$9,423
Goose Lake	1,365,000	4,155	1,185,000	3,555	2,570,000	7,710
Four Mile	426,000	1,278	22,000	66	450,000	1,350
Total	3,113,000	\$9,339	3,048,000	\$9,144	6,161,000	\$18,483

Table No. 1

Modoc Area

Percentage Relationship of 1920 Beetle Damage to Total Yellow Pine Volume*.

Name of Unit	Total Yellow Pine Volume in Board Feet	1920 Beetle Damage in Board Feet	Ratio of 1920 Beetle Damage to Total Yellow Pine Volume
Crowder Flat	453,500,000	3,141,000	.7 of one per cent
Goose Lake	378,320,000	2,570,000	.7 of one per cent
Four Mile	61,800,000	450,000	.7 of one per cent
	893,620,000	6,161,000	.7 of one per cent

*Great variation in the intensity of the infestation in various parts of a given unit is characteristic of these units. This is shown by the map. Therefore, the "1920 beetle damage - total volume" ratio must not be used as a basis for judging the necessity for control work. The ratio is given to the nearest tenth of one per cent.

Table No. 6

Modoc Area

Cost of Control--Spring of 1922*

Name of Unit	Modoc W. F.		Private		Total	
	Volume in Board Feet	Cost	Volume In Board Feet	Cost	Volume in Board Feet	Cost
Crowder Flat	650,000	\$2,925	920,500	\$4,142	1,570,500	\$7,067
Goose Lake	692,500	3,116	592,500	2,666	1,285,000	5,782
Four Mile	214,000	963	11,000	50	225,000	1,013
Total	1,556,500	\$7,004	1,524,000	\$6,858	3,080,500	\$13,862

*Volume to be treated is based on $\frac{1}{2}$ of volume of 1920 beetle loss in yellow pine. Cost of control is estimated at \$4.50 per thousand board feet of yellow pine to be treated.

ZIRCON AREA (Tables 7-13 Inc.)

ZIRCON AREA (Tables 7-13 Inc.)

Table No. 7

Fremont Area

Non-Timbered and Timbered Acreages*

Name of Unit	Non-timbered Acreage	Timbered Acreage	Total Acreage of Unit
Herritt Creek	5,320	23,040	28,360
Maryl Creek	11,260	57,860	69,120
Deming Creek	2,000	53,520	55,520
Owens	5,800	39,480	43,280
Quartz Valley	3,720	29,680	33,600
Horsefly	10,960	47,520	58,480
Goodlowe	13,440	17,440	30,880
Scab Rock	10,680	61,160	79,840
Hay Creek	9,460	34,680	44,160
Dog Lake	19,760	53,840	73,600
Total	98,420	418,420	516,840

*See Table No. 8 for ownership data on timbered acreages.

Table No. 8

Fremont Area

Timbered Acresages by Ownerships

Name of Unit	Fremont W. P.	Public Domain	State	Private	Total
Herritt Creek	5,760	2,040	0	15,240	23,040
Mervil Creek	5,420	7,040	640	44,560	57,860
Beming Creek	27,520	5,360	660	19,960	53,520
Owens	11,600	480	0	27,400	39,480
Quartz Valley	2,520	1,260	0	26,080	29,880
Horsefly	6,360	20,120	640	20,400	47,520
Goodlowe	6,200	4,920	560	5,760	17,440
Scab Rock	33,360	13,600	800	13,400	61,160
Hay Creek	29,800	480	0	4,400	34,680
Dog Lake	41,400	2,560	0	9,380	53,840
Totals	169,940	57,680	3,520	187,080	418,420

Table No. 3

Fremont Area

Timbered Acreages and Yellow Pine Volumes by Ownerships

of Unit:	Fremont N. P.	Vacant Public Domain:		State	Private		Totals		
		Timbered:			Timbered:				
		Acreage	Board Feet		Acreage	Board Feet			
Itt Creek	5,760	9,000,000	2,040	4,000,000	0	15,240	213,000,000		
l Creek	5,420	60,000,000	7,040	14,000,000	840	2,000,000	44,560		
ng Creek	27,520	275,000,000	5,360	11,000,000	680	1,400,000	19,960		
3	11,600	126,000,000	480	1,000,000	0	0	27,400		
tz Valley	2,520	28,000,000	1,260	3,000,000	0	0	26,060		
fly	6,360	64,000,000	20,120	40,000,000	640	1,300,000	20,400		
Lowe	6,200	43,000,000	4,920	10,000,000	560	1,000,000	5,760		
Rock	33,360	234,000,000	15,600	27,000,000	800	2,000,000	13,400		
Creek	29,800	238,000,000	480	1,000,000	0	0	4,400		
Lake	41,400	200,000,000	2,560	5,000,000	0	0	9,480		
I	169,940	1,369,000,000	57,880	116,000,000	3,520	7,700,000	187,080		
							2,161,000,000		
							418,420		
							3,653,700,000		

Table No. 10

Fremont Area

1920 Beetle Damage in Yellow Pine

Number of Trees* and Volume

Name of Unit	Fremont N. F.		Public Domain		State		Private		Total			
	No. of Trees		Volume in Bd. ft.		No. of Trees		Volume in Bd. ft.		No. of Trees		Volume in Bd. ft.	
Berrett Creek	158	142,000	30	27,000	0	0	529	476,000	717	645,000		
Beryl Creek	168	151,000	342	308,000	4	4,000	3,975	3,578,000	4,469	4,041,000		
Deming Creek	1,028	1,000,000	662	600,000	125	115,000	3,760	3,500,000	5,575	5,215,000		
Owens	2,157	1,726,000	117	94,000	0	0	4,637	3,710,000	6,911	5,530,000		
Quartz Valley	270	216,000	115	92,000	0	0	2,660	2,128,000	3,945	2,436,000		
Horsefly	1,700	1,360,000	2,064	1,650,000	0	0	3,821	3,057,000	7,585	6,067,000		
Goodlowe	485	291,000	220	132,000	27	16,000	348	209,000	1,080	648,000		
Scab Rock	1,027	822,000	669	535,000	36	28,000	594	475,000	2,325	1,867,000		
Bay Creek	1,002	601,000	16	10,000	0	0	302	181,000	1,320	792,000		
Dog Lake	1,474	1,132,000	122	98,000	0	0	527	422,000	2,065	1,653,000		
Total	9,411	7,441,000	4,357	3,546,000	191	163,000	21,153	17,736,000	35,112	28,886,000		

*Average volume of individual 1920 beetle-killed trees given in Table No. 36

Table No. 11

Fremont Area

1920 Beetle Damage in Yellow Pine

Name of Unit :	Fremont U. P. :	Public Domain :	State :	Private :	Total
		:Volume in Board Feet; \$3.00 per M			
Berritt Creek	142,000	\$426	27,000	\$81	0
Meryl Creek	151,000	453	308,000	924	4,000
Doming Creek	1,000,000	3,000	600,000	1,800	115,000
Owens	1,726,000	5,178	94,000	282	0
Quartz Valley	216,000	648	92,000	276	0
Horsefly	1,360,000	4,080	1,650,000	4,950	0
Goodlows	291,000	873	132,000	396	16,000
Seab Rock	822,000	2,466	535,000	1,605	28,000
Hay Creek	601,000	1,803	10,000	30	0
Dog Lake	1,132,000	3,396	98,000	294	0
Total	7,441,000	\$22,323	3,546,000	\$10,638	163,000
				\$489	17,736,000
				\$53,208	28,886,000
					\$86,658

Table No. 12

Fremont Area

Percentage Ratio of 1920 Beetle Damage to Total Yellow Pine Volume*

Name of Unit	Total Yellow Pine Volume in Board Feet	1920 Beetle Damage in Board Feet	Ratio of 1920 Beetle Damage to Total Pine Volume
Merritt Creek	226,000,000	645,000	Three-tenths of one per cent.
Maryi Creek	655,000,000	4,041,000	Six-tenths of one per cent.
Doming Creek	487,400,000	5,215,000	One and one-tenth of one per cent.
Owens	430,000,000	5,530,000	One and three-tenths of one per cent.
Quartz Valley	396,000,000	2,436,000	Six-tenths of one per cent.
Horsefly	309,300,000	6,967,000	Two per cent.
Goodlowe	117,000,000	648,000	Six-tenths of one per cent.
Seab Rock	357,000,000	1,860,000	Five-tenths of one per cent.
Hay Creek	292,000,000	792,000	Three-tenths of one per cent.
Dot Lake	384,000,000	1,652,000	Four-tenths of one per cent.
	3,653,700,000	28,886,000	Eight-tenths of one per cent.

*Great variation in the intensity of the infestation in various parts of most of these units is a general characteristic of the units in the Fremont Area. This is shown by the map. Therefore, the "1920 beetle damage - total volume" ratios must not be used as a basis for judging the necessity for control work. The ratios are given to the nearest tenth of one per cent.

To be charged.

Table No. 13

Fremont Area

Cost of Control—Spring of 1922*

Name of Unit:	Fremont N. F.	Public Domain	State	Private	Total
		Volume to be treated. Board Feet.			
		Cost	Cost	Cost	Cost
Merritt Creek	71,000	\$319	13,500	.61	0
Maryi Creek	75,500	340	154,000	693	2,000
Deming Creek	500,000	2,250	300,000	1,350	57,500
Owens	863,000	3,884	47,000	211	0
Quartz Valley	108,000	486	46,000	207	0
Horsefly	680,000	3,960	825,000	3,715	0
Goodlows	145,500	655	66,000	297	8,000
Seab Rock	411,000	1,849	267,500	1,204	14,000
Bay Creek	300,500	1,352	5,000	23	0
Dix Lake	566,000	2,547	49,000	220	0
Total	3,720,500	\$16,742	1,773,000	\$7,979	81,500
					\$367
					8,868,000
					\$39,906
					14,443,000
					\$64,994

*Volume to be treated is based on $\frac{1}{2}$ of volume of 1920 beetle loss. Cost of control is based on \$4.50 per thousand board feet of yellow pine to be treated.

KIAMBATH INDIAN RESERVATION (Tables 14-17 inc.)

KIAMBATH INDIAN RESERVATION (Tables 14-17 inc.)

Table No. 14

Yankee Indian Reservation

Acreages and Yellow Pine Volumes

Name of Unit	Timbered Acreage	Volumes of Yellow Pine in Board Feet
Chiloquin	12,400	168,000,000
Antelope	17,900	214,000,000
Sprague Canyon	2,500	28,000,000
Little Sprague	3,600	37,000,000
Egyptman	1,200 (2/3 cutover)	3,000,000
Saddle Mountain	27,300	293,000,000
Trout Creek	20,900	162,000,000
Squaw Flat	13,000	165,000,000
Yainax	7,300	60,000,000
Whiskey Creek	10,200	59,000,000
Bly	33,100	360,000,000
<u>Black Hills *</u>	<u>30,000</u>	<u>300,000,000</u>
Totals	179,400	1,889,000,000

*Data on this unit are rough estimates. Additional field work necessary

Table No. 15

Klamath Indian Reservation

1920 Beetle Damage in Yellow Pine

Name of Unit	Number of Trees	Volume in Board Feet	Loss at \$3.00 per M
Chiloquin	3,470	2,780,000	\$8,340
Antelope	5,650	3,960,000	11,880
Sprague Canyon	530	340,000	1,020
Little Sprague	460	360,000	1,080
Eggsman	100	80,000	240
Saddle Mountain	3,630	3,880,000	11,640
Trout Creek	2,720	1,900,000	5,700
Squaw Flat	1,310	1,310,000	3,930
Tainax	1,880	940,000	2,820
Whiskey Creek	1,660	1,130,000	3,390
Bly	5,690	3,410,000	10,230
Black Hills	4,700	2,820,000	8,460
Totals	32,120	22,910,000	\$68,730

See Table 36 for volume of average tree killed by beetles in 1920.

Table No. 16

Klamath Indian Reservation

Percentage Ratio of 1920 Beetle Damage to Total Yellow Pine Volume*

Name of Unit	Total Yellow Pine Volume in Board Feet	1920 Beetle Damage in Board Feet	Ratio of 1920 Beetle Damage to Total Yellow Pine Volume
Chiloquin	168,000,000	2,780,000	One and six-tenths of one per cent.
Antelope	214,000,000	3,960,000	One and nine-tenths of one per cent.
Sprague Canyon	26,000,000	340,000	One and two-tenths of one per cent.
Little Sprague	37,000,000	360,000	One per cent.
Sugman	3,000,000	80,000	Two and seven-tenths of one per cent.
Saddle Mountain	293,000,000	3,880,000	One and three-tenths of one per cent.
Trout Creek	182,000,000	1,900,000	One per cent.
Squaw Flat	165,000,000	1,310,000	Eight-tenths of one per cent.
Tainax	80,000,000	940,000	One and two-tenths of one per cent.
Shady Creek	59,000,000	1,130,000	One and nine-tenths of one per cent.
Bly	360,000,000	3,410,000	Nine-tenths of one per cent.
Black Hills	300,000,000	2,820,000	Nine-tenths of one per cent.
	1,669,000,000	22,910,000	One and two-tenths of one per cent.

*Great variation exists in the intensity of the infestation in various parts of most of the units on the Klamath Indian Reservation. This is shown by the map. Therefore, the "1920 beetle damage - total volume" ratios must not be used as a basis for judging the necessity for control work. The ratios are given to the nearest tenth of one per cent.

Table No. 17

Klamath Indian Reservation

Cost of Control—Spring of 1922*

Name of Unit	Volume in Board Feet to be treated	Cost of Treatment
Chilcoquin	1,390,000	\$6,255
Antelope	1,960,000	8,910
Sprague Canyon	170,000	765
Little Sprague	180,000	810
Eggerman	40,000	180
Saddle Mountain	1,940,000	8,730
Trout Creek	950,000	4,275
Snowy Flat	656,000	2,948
Tainax	470,000	2,115
Whiskey Creek	565,000	2,542
Bly	1,705,000	7,673
<u>Black Hills</u>	<u>1,410,000</u>	<u>6,345</u>
Total	11,455,000	51,547

*Volume to be treated is based on $\frac{1}{2}$ of volume of 1920 beetle loss in yellow pine. Cost of control is estimated at \$4.50 per thousand board feet of

AREA SOUTH OF INDIAN FRONTIER (Tables 18-24 line.)

AREA SOUTH OF INDIAN FRONTIER (Tables 18-24 line.)

Table No. 18

Area South of Klamath Indian Reservation

Non-timbered and Timbered Acreages*

Name of Unit	Non-timbered Acreage	Timbered Acreage	Total Acreage of Unit
Willow Flat	3,700	22,620	26,320
Royston	5,040	21,800	26,840
Rock Canyon	5,700	31,700	37,400
Hildebrand	5,020	26,050	31,310
Owen	2,475	33,495	35,970
Shiner Mt.	4,560	9,520	14,080
Totals	26,495	145,185	171,680

*See Table No. 19 for ownership data on timbered acreages.

Table No. 19

Area South of Klamath Indian Reservation

Timbered acreages by Game units

Name of Unit	:	Private	:	State	:	Public Domain	:	Totals
Willow Flat		16,400		480		5,740		22,620
Royston		18,120		800		2,880		21,800
Rock Canyon		19,560		1,480		10,660		31,700
Hildebrand		22,015		240		3,795		26,050
Swan		30,850		140		2,505		33,495
Shoper M.		6,320		0		1,200		9,520
Totals		115,265		3,140		26,780		145,185

Table No. 20

Area South of Klamath Indian Reservation

Acreages and Yellow Pine Volume by Ownership

Name of Unit	Private		Public Domain		State		Total	
	Timbered Acreage	Board Feet	Timbered Acreage	Board Feet	Timbered Acreage	Board Feet	Timbered Acreage	Board Feet
Willow Flat	16,400	180,000,000	5,740	11,000,000	460	1,000,000	22,620	192,000,000
Royston	18,120	217,000,000	2,880	6,000,000	800	2,000,000	21,800	225,000,000
Rock Canyon	19,560	176,000,000	10,660	21,000,000	1,480	3,000,000	31,700	200,000,000
Hildebrand	22,015	242,000,000	3,795	8,000,000	240	500,000	26,050	250,500,000
Swan	30,850	401,000,000	3,805	5,000,000	140	250,000	33,495	406,250,000
Shoper M.	8,320	42,000,000	1,200	2,500,000	0	0	9,520	44,500,000
Totals	115,265	1,258,000,000	26,780	53,500,000	3,140	6,750,000	145,185	1,318,250,000

Table No. 21

Area South of Klamath Indian Reservation

1920 Beetle Damage in Yellow Pine

Number of Trees* and Volume

<u>Name of Unit</u>	<u>Private</u>	<u>Public Domain</u>	<u>State</u>	<u>Total</u>
	<u>No. of Trees: Bd.ft.</u>			
Willow Flat	2,171	1,520,000	470	329,000
Royston	2,771	2,217,000	624	339,000
Rock Canyon	2,297	1,608,000	1,293	905,000
Hildebrand	3,994	3,595,000	777	699,000
Owen	5,536	4,429,000	285	228,000
Shemer M.	3,213	1,606,000	472	236,000
Totals	19,982	14,975,000	3,721	2,736,000
			363	280,000
			0	0
				3,685
				1,842,000
				17,991,000

*Average volume of individual trees given in Table No. 26

Table No. 19

Area South of Indian Reservation

1920 Beetle Damage in Yellow Pine

Volume and Value of Damage

Name of Unit	Private		Public Domain		State		Total	
	Volume in Bd.ft.	Value at \$3.00 per M	Volume in Bd.ft.	Value at \$3.00 per M	Volume in Bd.ft.	Value at \$3.00 per M	Volume in Bd.ft.	Value at \$3.00 per M
Willow Flat	1,520,000	\$4,560	329,000	\$987	41,000	\$123	1,890,000	\$5,670
Roxton	2,217,000	6,651	339,000	1,017	60,000	180	2,616,000	7,848
Rock Canyon	1,608,000	4,824	905,000	2,715	90,000	270	2,603,000	7,809
Hildebrand	3,595,000	10,785	699,000	2,097	64,000	192	4,358,000	13,074
Swan	4,429,000	13,267	226,000	684	25,000	75	4,682,000	14,046
Shiner Mt.	1,606,000	4,818	236,000	726	0	0	1,842,000	5,526
Total	14,975,000	\$44,925	2,736,000	\$8,208	280,000	\$840	17,991,000	\$53,973

Table No. 2

Area South of Klamath Indian Reservation

Percentage Ratio of 1920 Beetle Damage to Total Yellow Pine Volume*

Name of Unit	Total Yellow Pine Volume in Board Feet	1920 Beetle Damage in Board Feet	Ratio of 1920 Beetle Damage to Total Yellow Pine Volume.
Willow Flat	192,000,000	1,890,000	One per cent.
Boyston	225,000,000	2,616,000	One and two-tenths of one per cent.
Rock Canyon	200,000,000	2,603,000	One and three-tenths of one per cent.
Hildebrand	250,500,000	4,358,000	Two per cent.
Swan	406,250,000	4,682,000	One and two-tenths of one per cent.
Shaver M.	44,500,000	1,842,000	Four and one-tenth of one per cent.
	1,318,250,000	17,991,000	One and four-tenths of one per cent.

*Great variation exists in the intensity of the infestation in various parts of the units in the area south of the Klamath Indian Reservation. This is shown by the map. Therefore, the "1920 beetle damage - total volume" ratios must not be used as a basis for judging the necessity for control work. The ratios are given to the nearest tenth of one per cent.

Table No. 24

Area South of Indian Reservation

Cost of Control--Spring of 1922*

	Private		Public Domain		State		Total	
Name of Unit	Volume to be treated	Cost	Volume to be treated	Cost	Volume to be treated	Cost	Volume to be treated	Cost
Willow Flat	760,000	\$3,420	164,500	\$740	20,500	\$92	945,000	\$4,252
Royston	1,108,500	4,968	169,500	763	30,000	155	1,308,000	5,896
Rock Canyon	804,000	3,618	452,500	2,036	45,000	203	1,301,500	5,857
Hildebrand	1,797,500	8,009	349,500	1,573	32,000	144	2,179,000	9,806
Swan Mt.	2,214,500	9,965	114,000	513	12,500	56	2,341,000	10,534
Shenow Mt.	803,000	\$3,614	118,000	531	0	0	921,000	4,145
Total	7,487,500	\$33,694	1,368,000	\$6,156	140,000	\$630	8,995,500	\$40,480

*Volume to be treated is based on $\frac{1}{2}$ of volume of 1920 beetle loss in yellow pine. Cost of control is estimated at \$4.50 per thousand board feet of yellow pine to be treated.

AREA WEST OF KLAMATH LAKE (Tables 25-31 Inc.)

AREA WEST OF Klamath Lake (Tables 25-31 Inc.)

Table No. 15

Area West of Klamath Lake

Non-timbered and Timbered acreages*

<u>Name of Unit</u>	<u>Non-timbered Acreage</u>	<u>Timbered Acreage</u>	<u>Total Acreage of Unit</u>
Jonny Creek	160	49,120	49,280
Johnson Prairie	206	52,860	53,060
Pokagon	150	55,260	55,420
Chase Butte	1,280	59,500	60,780
Clover Station	1,200	53,040	54,240
Round Lake	2,070	10,000	12,160
Zocus	1,200	9,900	11,100
Aspen Lake	3,720	20,260	23,980
<u>Pagle Ridge</u>	<u>400</u>	<u>17,100</u>	<u>17,500</u>
Totals	10,390	327,130	337,520

*See Table No. 16 for ownership data on timbered acreages.

Table No. 26

Area West of Klamath Lake

Timbered Acresages by Ownerships

Name of Unit	Crater N. F.	Klamath N. F.	C and C	Vacant	State	Private	Total
Jenny Creek	1,660	0	16,680	2,760	0	26,000	49,120
Johnson Prairie	4,400	0	13,800	440	0	34,220	52,860
Pokagona	0	760	9,060	2,600	0	42,640	55,260
Chase Butte	0	1,240	15,060	1,400	0	41,600	59,500
Clover Station	5,960	0	7,480	280	0	39,320	53,040
Round Lake	0	0	0	0	40	10,050	10,090
Wocus	0	0	0	0	0	9,900	9,900
Aspen Lake	1,200	0	0	0	0	18,960	20,260
Eagle Ridge		0	0	0	0	17,100	17,100
Totals	13,320	2,000	62,080	7,480	40	242,210	327,130

Table No. 27

Area West of Klamath Lake

Timbered Acreage and Yellow Pine Volume by Ownership

Unit:	Crater N.F.	Klamath N.F.	O and C Grant	Public Domain	State	Private	Total	Timbered:		Timbered:		Timbered:		Timbered:	
								Acreage	Board Feet	Acreage	Board Feet	Acreage	Board Feet	Acreage	Board Feet
Jenny Creek	1,680	9,000,000	0	0	16,680	59,000,000	2,760	6,000,000	0	0	28,000	420,000,000	49,120	494,000,000	
Johnson Prairie	4,400	24,000,000	0	0	13,800	45,000,000	440	900,000	0	0	34,220	548,000,000	52,860	615,900,000	
Pelagana	0	0	760	2,500,000	9,060	55,000,000	2,600	5,000,000	0	0	42,840	857,300,000	55,260	919,500,000	
Chase Butte	0	0	1,240	3,000,000	15,060	130,000,000	1,400	3,000,000	0	0	41,800	585,000,000	59,560	721,000,000	
Clover Station	5,960	33,000,000	0	0	7,480	40,000,000	280	600,000	0	0	39,320	551,000,000	53,040	624,600,000	
Round Lake	0	0	0	0	0	0	0	0	40	800,000	10,050	121,000,000	10,090	121,500,000	
Wocus	0	0	0	0	0	0	0	0	0	0	9,900	80,000,000	9,900	80,000,000	
Aspen Lake	1,280	7,000,000	0	0	0	0	0	0	0	0	18,980	247,000,000	20,260	254,000,000	
Redwood Bluffs	0	0	0	0	0	0	0	0	0	0	17,100	237,000,000	17,100	239,000,000	
Totals	13,320	75,000,000	2,000	5,500,000	62,080	327,000,000	7,480	15,500,000	40	500,000	262,210	5,648,000,000	327,150	4,069,500,000	

Table No. 28

Area West of Klamath Lake

1920 Beetle Damage in Yellow Pine

Number of Trees* and Volume.

Name of Unit	Crater N. F.		Klamath N. F.		O and C Grant		Public Domain		Private		Total	
	No. Trees.	Volume in Bd.ft.	No. Trees.	Volume in Bd.ft.	No. Trees.	Volume in Bd.ft.	No. Trees.	Volume in Bd.ft.	No. Trees.	Volume in Bd.ft.	No. Trees.	Volume in Bd.ft.
Jenny Creek	11	13,000	0	0	682	818,000	124	149,000	1,056	1,300,000	1,873	2,280,000
Johnson Prairie	75	90,000	0	0	426	511,000	12	14,000	1,979	2,400,000	2,492	3,815,000
Pokagona	0	0	175	245,000	1,458	2,000,000	567	794,000	4,320	6,000,000	6,520	9,039,000
Chase Butte	0	0	55	55,000	2,012	2,000,000	325	325,000	4,804	4,800,000	7,196	7,180,000
Clover Station	458	550,000	0	0	593	712,000	25	30,000	6,039	7,200,000	7,115	8,492,000
Round Lake	0	0	0	0	0	0	5	6,000	2,312	2,600,000	2,317	2,606,000
Vocus	0	0	0	0	0	0	0	0	2,405	2,200,000	2,405	2,200,000
Aspen Lake	60	60,000	0	0	0	0	0	0	4,045	4,000,000	4,105	4,060,000
Eagle Ridge	0	0	0	0	0	0	0	0	3,397	2,400,000	3,397	2,400,000
Totals	604	713,000	230	300,000	5,171	6,041,000	1,059	1,318,000	30,357	32,900,000	37,420	41,272,000

*Average Volume of individual 1920 beetle-killed trees given in Table No. 16

Table No. 29

Area West of Klamath Lake

1930 Beetle Damage in Yellow Pine

Volume and Value of Damage

Name of Unit	Crater N. P.	Klamath N. P.	C and C		Public Domain		Private		Total			
			Volume in : M. ft.	Value at 3.00 : M. ft.	Volume in : M. ft.	Value at 3.00 : M. ft.	Volume in : M. ft.	Value at 3.00 : M. ft.	Volume in : M. ft.	Value at 3.00 : M. ft.		
Sunny Creek	15,000	0	0	0	818,000	\$2,454	149,000	\$447	1,300,000	\$3,900	2,280,000	\$6,840
Johnson Prairie	90,000	270	0	0	511,000	1,535	14,000	42	2,400,000	7,200	3,015,000	9,045
Pokagonas	0	0	245,000	3735	2,000,000	6,000	794,000	2,352	6,000,000	18,000	9,038,000	27,117
Glenn Butte	0	0	55,000	165	2,000,000	6,000	325,000	975	6,000,000	14,400	7,180,000	21,540
Clover Station	550,000	1,650	0	0	712,000	2,134	30,000	90	7,200,000	21,600	8,492,000	25,476
Round Lake *	0	0	0	0	0	0	6,000	18	2,800,000	7,800	2,806,000	7,818
Weens	0	0	0	0	0	0	0	0	2,200,000	6,600	2,200,000	6,600
Aspen Lake	60,000	180	0	0	0	0	0	0	4,000,000	12,000	4,060,000	12,160
Padre Mtn	0	0	0	0	0	0	0	0	2,400,000	7,200	2,400,000	7,200
Totals	715,000	\$2,139	300,000	\$900	8,041,000	\$18,123	1,318,000	\$3,954	35,900,000	98,700	41,272,000	\$123,816

*The State of Oregon owns 40 acres in this unit, but the beetle damage is negligible.

Table No. 30

Area West of Klamath Lake

Percentage Ratio of 1920 Beetle Damage to Total Yellow Pine Volume*

Name of Unit	Total Yellow Pine Volume in Board Feet	1920 Beetle Damage in Board Feet	Ratio of 1920 Beetle Damage to Total of Yellow Pine Volume
Jenny Creek	494,000,000	2,280,000	Five-tenths of one per cent.
Johnson Prairie	615,900,000	3,015,000	Five-tenths of one per cent.
Pokegama	919,500,000	9,039,000	One per cent.
Chase Butte	721,000,000	7,180,000	One per cent.
Clover Station	624,600,000	8,492,000	One and four-tenths of one per cent.
Round Lake	121,500,000	2,606,000	Two and one-tenth of one per cent.
Wocus	80,000,000	2,200,000	Two and eight-tenths of one per cent.
Aspen Lake	254,000,000	4,060,000	One and six-tenths of one per cent.
Eagle Ridge	239,000,000	2,400,000	One per cent.
	4,069,500,000	41,272,000	One per cent.

*Great variation in the intensity of the infestation in various parts of most of these units is a general characteristic of the units in the area west of Klamath Lake. This is shown by the map. Therefore, the "1920 beetle damage - total volume" ratios must not be used as a basis for judging the necessity for control work. The ratios are given to the nearest tenth of one per cent.

Table No. 31

Area West of Klamath Lake

Cost of Control - Spring of 1922*

Name of Unit	Crater H.P.		Klamath H.P.		C and G		Public Domain		Private		Total	
	Volume in : Bd.ft.		Volume in : Bd.ft.		Volume in : Bd.ft.		Volume in : Bd.ft.		Volume in : Bd.ft.		Volume in : Bd.ft.	
	Cost	Bd.ft.	Cost	Bd.ft.	Cost	Bd.ft.	Cost	Bd.ft.	Cost	Bd.ft.	Cost	Bd.ft.
Jenny Creek	6,500	\$29	0	0	409,000	\$1,841	74,500	\$335	650,000	\$2,925	1,140,000	\$5,130
Johnson Prairie	45,000	202	0	0	255,500	1,150	7,000	51	1,200,000	5,400	1,507,500	6,781
Polegama	0	0	122,500	\$351	1,000,000	4,500	397,000	1,787	3,000,000	13,500	4,519,500	20,338
Chase Butte	0	0	27,500	124	1,000,000	4,500	162,500	731	2,400,000	10,800	3,590,000	16,158
Clover Station	275,000	1,238	0	0	356,000	1,602	15,000	67	3,600,000	16,200	4,246,000	19,107
Round Lake	0	0	0	0	0	0	3,000	14	1,300,000	5,860	1,303,000	5,864
Weesus	0	0	0	0	0	0	0	0	1,100,000	4,950	1,100,000	4,950
Aspen Lake	30,000	136	0	0	0	0	0	0	2,000,000	9,300	2,030,000	9,136
Eagle Ridge	0	0	0	0	0	0	0	0	1,200,000	5,400	1,200,000	5,400
Total	356,500	\$1,604	150,000	\$675	3,020,500	\$13,593	659,000	\$2,965	16,450,000	\$74,025	20,636,000	\$92,862

*Volume to be treated is based on $\frac{1}{2}$ of volume of 1920 beetle loss in yellow pine. Cost of control is estimated at \$4.50 per thousand board feet of yellow pine to be treated.

PROJECT SUMMARIES (Tables 32-39 Inc.)

Project Summaries (Tables 32-39 Inc.)

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Table No. 32

Inventory of Southern Oregon-Northern California Control Project

Non-timbered and timbered acreages*

Area	Non-timbered Acreage	Timbered Acreage	Total Acreage
Modoc Area	8,600	95,000	103,600
Reconent Area	98,420	618,420	616,840
Murphy Indian Reservation	"	179,400	179,400
Area South of Reservation	26,495	145,165	171,660
Area West of Klamath Lake	10,350	827,150	837,520
Total for entire project	143,905	1,165,135	1,309,040

*See Table No. 32 for ownership data on timbered acreages and yellow pine volumes.

**No data available for dividing Indian Reservation area into non-timbered and timbered acreage.

Table No. 32

Summary of Southern Oregon-Northern California Control Project

Timbered Acresages and Yellow Pine Volumes by Ownership.

Ownership	Modoc Area		Fremont Area		Klamath Indian Reservation		Area South of Reservation		Area West of Klamath Lake		Total	
	Timbered : Acresage	Yellow Pine Volumes: in Board Feet	Timbered : Acresage	Yellow Pine Volumes: in Board Feet	Timbered : Acresage	Yellow Pine Volumes: in Board Feet	Timbered : Acresage	Yellow Pine Volumes: in Board Feet	Timbered : Acresage	Yellow Pine Volumes: in Board Feet	Timbered : Acresage	Yellow Pine Volumes: in Board Feet
Modoc N. F.	62,000	460,120,000									62,000	460,120,000
Fremont N. F.			169,940	1,369,000,000							169,940	1,369,000,000
Crater N. F.												
Klamath N. F.							13,320	73,000,000	13,320	73,000,000		
Klamath Indian Reservation					179,400	1,689,000,000			2,000	5,500,000	2,000	5,500,000
Public Domain		57,880	116,000,000				26,760	55,500,000	7,480	15,500,000	92,140	165,000,000
State		3,520	7,700,000				3,140	6,750,000	40	500,000	6,700	14,950,000
C and C Grant									62,080	327,000,000	62,080	327,000,000
Private	33,000	435,500,000	167,060	2,161,000,000			115,268	1,256,000,000	242,210	5,648,000,000	577,555	7,500,500,000
Totals	95,000	893,620,000	416,420	3,655,700,000	179,400	1,689,000,000	145,185	1,318,250,000	327,130	4,069,500,000	1,165,135	11,824,970,000

Table No. 34³⁴

Summary of Southern Oregon-Northern California Project

1920 Beetle Damage in Yellow Pine

Number of Trees* and Volumes.

Modoc Area				Fremont Area				Klamath Indian Reservation				Area South of Reservation				Area West of Klamath Lake				Totals		
No. Trees		Volume in Bd.ft.		No. Trees		Volume in Bd.ft.		No. Trees		Volume in Bd.ft.		No. Trees		Volume in Bd.ft.		No. Trees		Volume in Bd.ft.		No. Trees		
Ownership		Killed in : of 1920 Y.P.		Killed in : of 1920 Y.P.		Killed in : of 1920 Y.P.		Killed in : of 1920 Y.P.		Killed in : of 1920 Y.P.		Killed in : of 1920 Y.P.		Killed in : of 1920 Y.P.		Killed in : of 1920 Y.P.		Killed in : of 1920 Y.P.		Killed in : of 1920 Y.P.		
; 1920		; Damage		; 1920		; Damage		; 1920		; Damage		; 1920		; Damage		; 1920		; Damage		; 1920		
Modoc N. F.	3,135	3,113,000																		3,135	3,113,000	
Fremont N. F.			9,411	7,441,000																9,411	7,441,000	
Crater N. F.																			604	713,000	604	713,000
Klamath N. F.																			230	300,000	230	300,000
Klamath Indian Reservation					32,120	22,910,000													32,120	22,910,000		
Public Domain			4,357	3,546,000					3,721	2,756,000					1,058	1,318,000			9,136	7,600,000		
State			191	163,000					363	280,000									554	443,000		
O and C Grant															5,171	6,041,000			5,171	6,041,000		
Private	3,015	3,048,000	21,153	17,736,000					19,982	14,975,000					30,357	32,900,000			74,507	68,659,000		
Totals	6,150	6,161,000	35,112	28,886,000	32,120	22,910,000			24,066	17,991,000					37,420	41,272,000			134,866	117,220,000		

*Average volume of individual 1920 beetle killed trees given in Table No. 36.

Table No. 35

Summary of Southern Oregon-Northern California Control Project

1938 Beetle Damage in Yellow Pine by Ownership

Volume and Value* of Damage in Yellow Pine.

Ownership	Modoc Area		Francesco Area		Klamath Indian Reservation; Area South of Reservation		Area West of Klamath Lake		Totals		
	Volume of Yellow Pine Damage in Board Feet		Value of Yellow Pine Damage in Dollars		Volume of Yellow Pine Damage in Board Feet		Value of Yellow Pine Damage in Dollars		Volume of Yellow Pine Damage in Board Feet		
	of	Board Feet	of	Dollars	of	Board Feet	of	Board Feet	of	Board Feet	of
Modoc Co. P.	5,115,000		\$9,329								5,115,000 \$9,329
Francesco Co. P.			7,448,000	\$22,323							7,448,000 \$22,323
Grants Co. P.									715,000	\$2,129	715,000 2,129
Klamath Co. P.									300,000	900	300,000 900
Klamath Indian Reservation					22,910,000	\$68,730					22,910,000 \$68,730
Public Domain		3,846,000	10,600				2,726,000	\$8,208	1,318,000	3,954	7,800,000 22,800
State		163,000	469				260,000	840			443,000 1,323
C and C Grant									6,061,000	18,123	6,061,000 18,123
Private	5,000,000	2,344	17,754,000	\$5,300			14,275,000	\$4,305	32,800,000	98,700	68,800,000 205,707
Total	6,161,000	\$20,603	26,888,000	\$26,600	22,910,000	\$68,730	17,931,000	\$63,975	41,272,000	\$123,816	117,220,000 \$321,440

*\$.00 per thousand board feet is the basis used.

Table No. 36

Volume of Average Yellow Pine Tree Killed in 1920 by Beetles

For Each Unit on the 5 Areas.

<u>Kodoc Area</u>		<u>Area South of Indian Reservation</u>		<u>Elkooth Indian Reservation</u>	
Name of Unit : Volume of Average Tree in Board Feet		Name of Unit : Volume of Average Tree in Board Feet		Name of Unit Volume of Average Tree in Board Feet	
Crowder Flat	1,020	Willow Flat	700	Chilequin	800
Goose Lake	1,000	Toyston	800	Antelope	700
Four Mile	900	Rock Canyon	700	Sprague Canyon	900
<u>Fremont Area</u>		Hildebrand	900	Little Sprague	800
Name of Unit : Volume of Average Tree in Board Feet		Swan	800	Eggeman	800
Arritt Creek	900	Shoner M.	500	Saddle Mountain	1,000
Bryl Creek	900	<u>Area North of Lake</u>		Trout Creek	700
Spring Creek	900	<u>Area West of Lake</u>		Squaw Flat	1,000
Wens	800	Jenny Creek	1,200	Tainax	500
Marts Valley	800	Johnson Prairie	1,200	Whiskey Creek	600
Worsefly	800	Pokagona	1,400	Bly	600
Bedlowe	600	Chase Butte	1,000	Black Hills	700
Sal Rock	800	Clover Station	1,200		
By Creek	600	Round Lake	1,100		
ing Lake	800	Wocus	900		
		Aspen Lake	1,000		
		Eagle Ridge	700		

Table No. 37

Summary of Southern Oregon-Northern California Control Project

Percentage Ratio of 1920 Beetle Damage to Total Yellow Pine Volume*

Area	Total Yellow Pine Volume in Board Feet	1920 Beetle Damage in Board Feet	Ratio of 1920 Beetle Damage to Total Pine Volume
Hodoo Area	893,620,000	6,161,000	Seven-tenths of one per cent
Fremont Area	3,653,700,000	28,886,000	Eight-tenths of one per cent.
Klamath Indian Reservation	1,889,000,000	22,910,000	One and two-tenths of one per cent.
Area South of Klamath Indian Reservation	1,318,250,000	17,991,000	One and four-tenths of one per cent.
Area West of Klamath Lake	4,069,500,000	41,272,000	One per cent.
Entire Project	11,824,070,000	117,220,000	One per cent.

*Considerable variation exists in the intensity of the infestation in the five areas included in the southern Oregon-northern California control project. This is shown by the map. Therefore, the "1920 beetle damage - total volume" ratios must not be used as a basis for judging the necessity for control work. The ratios are given to the nearest tenth of one per cent.

	N.F.	Public	State	OrC	Private	Total
Awal	15,320	7,480	40	62,080	242,210	327,130
					Indian	
Area 2		26,780	3,140	179,400	115,265	324,585
Area 3	231,940	57,880	3,520		220,080	573,420

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Table No. 38

Summary of Southern Oregon-Northern California Control Project

Cost of Control - Spring of 1922*

	Hodoo Area	Fremont area	Klamath Indian Reservation	Area South of Reservation	Area West of Klamath Lake	Totals						
Ownership	Volume to be treated	Cost	Volume to be treated	Cost	Volume to be treated	Cost	Volume to be treated	Cost	Volume to be treated	Cost	Volume to be treated	Cost
Hodoo N. F.	1,556,500	\$ 7,004										1,556,500 \$ 7,004
Fremont N.F.		3,720,500	\$16,742									3,720,500 \$ 16,742
Crater R. F.									556,500	\$ 1,604	556,500	1,604
Klamath N. F.								150,000	675	150,000	675	
Klamath Indian Reservation			11,455,000	\$51,547								11,455,000 \$51,547
Public Domain		1,773,000	\$7,979		1,366,000	\$6,156	659,000	2,965	3,800,000	17,100		
State		61,500	367		140,000	630					221,500	997
C and C Grant							3,020,500	13,593	3,020,500	13,593		
Private	1,524,000	\$ 6,858	8,668,000	\$39,906	7,487,500	\$32,694	16,450,000	74,025	34,529,500	154,483		
Totals	3,080,500	\$13,862	14,443,000	\$64,994	11,455,000	\$51,547	8,995,000	\$40,480	20,636,000	\$92,862	58,610,000	\$263,745

*Volume to be treated is based on $\frac{1}{2}$ of volume of 1920 beetle loss in yellow pine. Cost of control is estimated at \$4.50 per thousand board feet of yellow pine to be treated.

Table No. 39

Summary of Southern Oregon - Northern California Control Project

Timbered Acres, Yellow Pine Volumes and Control Costs

Divided According to Responsibility.

Responsibility for Control	Timbered Acreage	Yellow Pine Volume in Board Feet on Timbered Acreage	Estimated Control Costs for Spring of 1922
<u>Department of Interior.</u>			
Klamath Indian Reservation	179,400	1,869,000,000	\$ 51,547
Oregon -California Grant Lands	62,080	327,000,000	13,593
Vacant Public Domain	92,140	185,000,000	17,100
<u>Total for Department of Interior</u>	<u>333,620</u>	<u>2,401,000,000</u>	<u>882,240</u>
<u>Forest Service</u>			
Hoodoo National Forest	62,000	460,120,000	7,004
Premont National Forest	169,940	1,369,000,000	16,742
Crater National Forest	13,320	73,000,000	1,604
Klamath National Forest	2,000	5,500,000	675
<u>Total for Forest Service</u>	<u>247,260</u>	<u>1,907,620,000</u>	<u>226,925</u>
<u>State of Oregon - State Lands</u>	<u>6,700</u>	<u>14,950,000</u>	<u>997</u>
<u>Private Owners</u>	<u>577,555</u>	<u>7,500,500,000</u>	<u>\$154,485</u>
<u>Total for All Agencies</u>	<u>1,165,135</u>	<u>11,824,070,000</u>	<u>\$263,745</u>

OPY

Southern Oregon - Northern California

Pine Beetle Control Project

Acreage in Oregon

	Forest	Public	O & C	Klamath Indian Reservation	State	Private	Total
Area 1	13,160	7,480	62,080		40	226,570	309,330
Area 2		26,780		179,400	3,140	115,265	324,585
Area 3	169,940	57,880			3,520	187,080	418,420
	183,100	92,140	62,080	179,400	6,700	528,915	1,052,335

(enclosed figures copied from original)

Line 1

Line 2

Line 3

231,943
52,880

289,820

222,080

